



Academy

California Academy of Sciences' Member Newsletter

February/March 2000

**A Thousand Cranes
Opens January 29**

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**Venoms . . . Are Coming
March 25**

To explore and explain the natural world

STEINHART AQUARIUM • MORRISON PLANETARIUM • NATURAL HISTORY MUSEUM

Executive Director's Message

The middle of winter is usually the most difficult time for aging buildings, and the Academy is no exception. Late yesterday afternoon, during a particularly heavy rain, I took a behind-the-scenes tour of our facilities. It was both a sobering and heart-warming journey. It was sobering because the corridors through the research departments were cluttered with plastic bags and trashcans intercepting



PHOTO: DONGJIN

Dr. Patrick Kocielek

the drips from the roof; sobering because the backstage walk took me through collection areas where the shelves are overflowing and the collection managers must be creative to find suitable space for rare specimens and artifacts; sobering because it included a

shortcut through one of our oldest and most memorable exhibit spaces, Bird Hall, which has long since been closed to the public because of seismic damage.

But the experience was by no means all negative. Squeezed between the buckets, unfazed by the corroded walls and the priceless, but temporarily homeless specimens, are some of the most dedicated scientists and staff a museum could wish for.

Researchers are fully involved with their pursuits, new classes are being organized, and designers are in high gear preparing for the next round of exhibits. The dedication of the staff to the tasks on hand, their willingness to work around the obstacles and their enthusiasm for our goals are the glue that holds the Academy together throughout this difficult time.

We are reaching the climax of this critical campaign to finance the rebuilding of the Academy. Our efforts over the next month will determine the success of Proposition B, to repair and rebuild the Academy. I hope that those of you who live in San Francisco will be willing to take further steps: talk to your friends, send e-mails to colleagues, put up campaign signs, and, above all, please Vote Yes on B on March 7th.

Thank you very much for your support.

Call Meagan Levitan at (415) 750-7295 if you want to volunteer with San Franciscans to Fix Our Academy of Sciences.

15th Annual Run To The Far Side A Wild Success

On a clear, crisp November morning, more than 13,000 runners, joggers, walkers, rollers, strollers, and costumed "Far Side" characters turned out for the 15th Annual Run To The

Far Side. Inspired by the eccentric cartoon creations of Gary Larson, this annual event has become a beloved San Francisco Thanksgiving weekend tradition and attracts runners from as far away as Africa.

More than \$4000 in cash and prizes was awarded to the top 'Far Side' costumes. From "Spamalopes" to "Mad Cows," the costume entries that bring to life Larson's



PHOTO: CAROLINE KOPP

First place costume winner "Giraffe"

creations were more colorful and creative than ever before.

Thanks to Academy members and staff, their families and friends who volunteered their time to make this event an enormous success. Proceeds from the Run To The Far Side support the Academy's research and education programs.

In Memoriam: Dr. Robert T. Wallace

Recently, the Academy lost one of its most committed benefactors. He had been an Academy supporter since the early 1980's and will be most remembered for creating and endowing the Robert T. Wallace Undergraduate Research Internship. Since 1994, six undergraduate student interns from across the United States have benefited from his generosity by working on original scientific research with Academy scientists in the fields of invertebrate zoology, ichthyology, botany and herpetology, for 10 weeks each summer. Dr. Wallace earned his Ph.D. in entomology from Rutgers University and worked for more than 35 years in Marketing for the Chevron Ortho Division. It was Dr. Wallace's hope that his internship would allow more students to pursue careers in science – it has accomplished that goal and will continue to do so in the future.

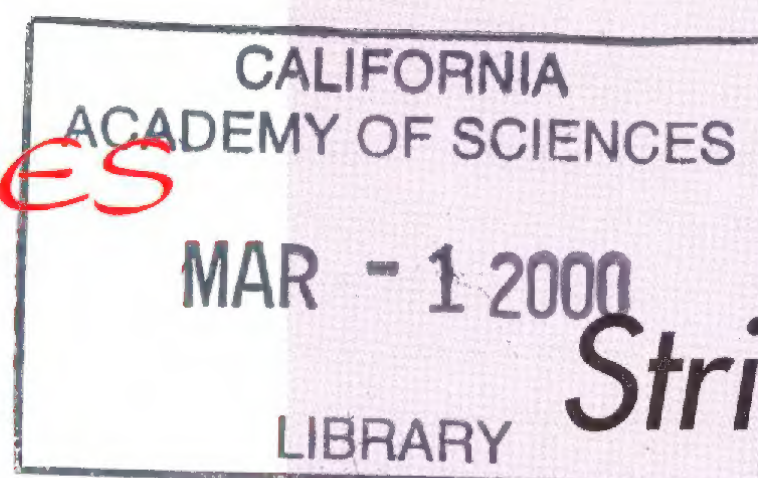
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Feb/Mar 2000

A THOUSAND CRANES

A Photographic Exhibit

by Wu Shao-Tung

January 29 through July 30

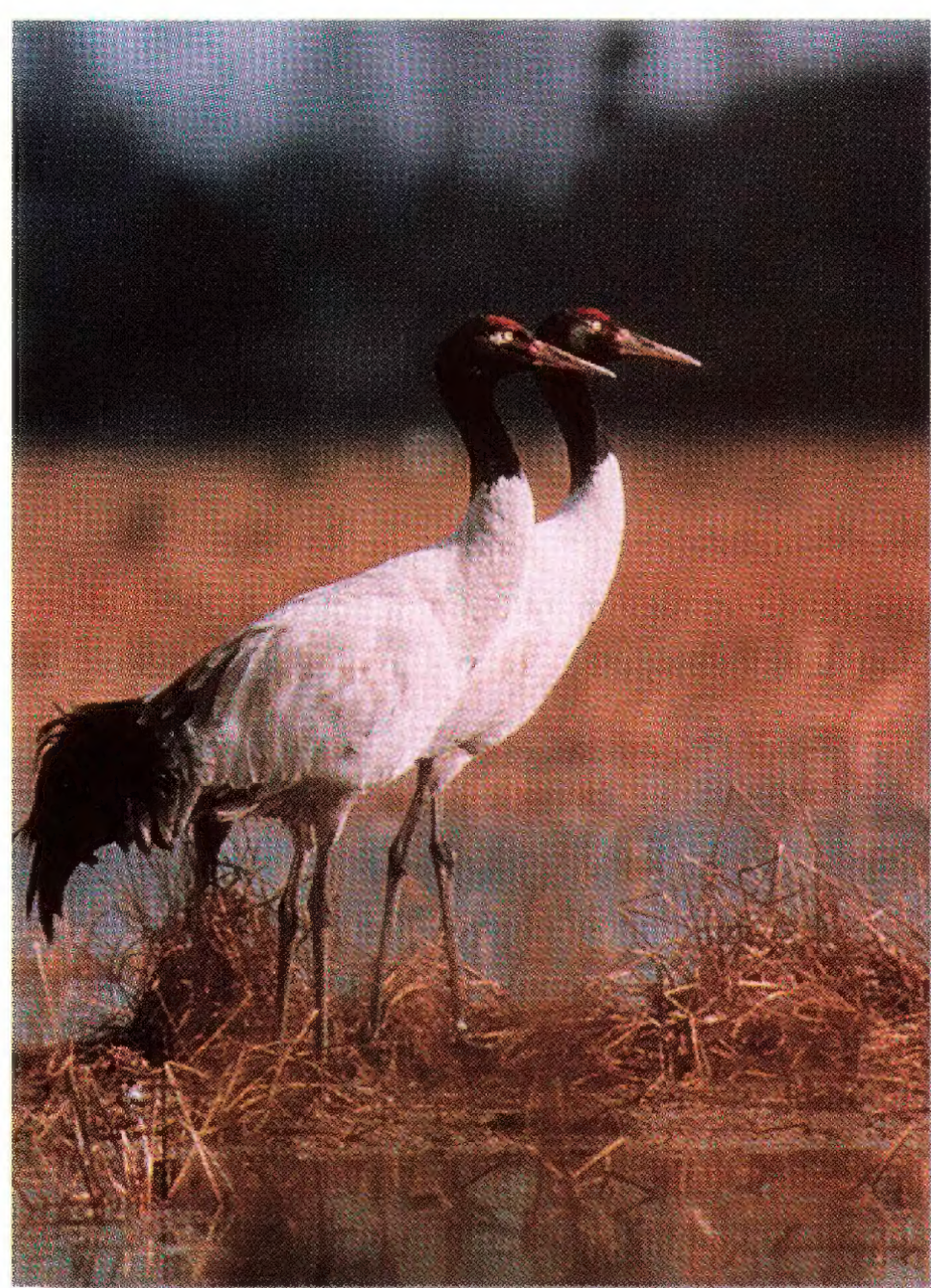


Venoms: Striking Beauties

Opens March 25

Cranes are honored symbols of long life in China and Japan. In Vietnam, it is believed cranes carry the souls of the dead to heaven and in Australia, aboriginal peoples pattern their own dances after the crane's graceful movements. Though their symbolic significance varies from culture to culture, each crane gesture and pose conveys a sense of calm and harmony.

Through the lens of Wu Shao-Tung, we see the beauty of these large and graceful birds that have been around for the last 34 to 50 million years. Cranes are found everywhere



Black-necked Crane

except South America and Antarctica. Yet their numbers continue to decline due to habitat destruction and unregulated hunting. Mr. Wu, a retired photo-journalist, has spent the last seven years observing and photographing cranes in India, Siberia, Africa, China, Australia, North America, and Japan. **A Thousand Cranes**, featuring fifty of his photographs, will also include a jade crane statue and life-size bronze cranes on loan to the Academy from the Asian Art Museum. The Academy will display its original copy of a Double Elephant folio of John James Audobon's "Birds of America." The rare folio, one of only 134 sets, includes 435 hand-colored plates with 1,065 life-size figures of 489 different bird species.

As a gesture of goodwill to visitors to the exhibit, the Academy will hang 1000 folded paper cranes from the ceiling. **A Thousand Cranes** will be on display through July 30.



Common Crane

In the race to eat and avoid being eaten, a surprisingly diverse group of animals has developed a deadly edge in survival: venom. Venomous animals inject toxins into other animals in order to capture prey and deter predators. The results are usually fatal.

Featuring live animals safely kept behind glass, **Venoms: Striking Beauties**, a new temporary exhibit at the Academy, will offer visitors an experience to view these deadly creatures of the wild up close.

In addition to the stars of the exhibit, **Striking Beauties** will include action-packed videos, natural history specimens, and interactive challenges. The exhibit will reveal the mechanisms that venomous animals use to inject their dangerous doses, how the venom affects the victim, and how venomous creatures advertise their lethal natures.

From the shiveringly sinister – like the giant Goliath spider, gila monster, and death stalker scorpion – to the breathtakingly beautiful, such as upside-down jellyfish, coral snakes, nudibranchs and lionfish, more than twenty-five live representatives of the world of venomous animals will be on display in this "killer" Academy exhibition.



Recently discovered species of spitting cobra in Burma

PHOTO: DONG LIN

Is there something in the sky that you're wondering about? Visit the Planetarium where all of our shows are presented by a live lecturer who can answer your astronomy questions or pick up one of our *Pocket Almanacs* – a listing of upcoming celestial events. More sky information is available on the Planetarium's recorded information line, (415) 750-7141, or on www.calacademy.org/planetarium/. If you don't find an answer there, call us at (415) 750-7127.

Sky Shows

Almanac 2000

Through March 12

What celestial sights will we be seeing during the coming year? Solar eclipses? Planetary groupings? Meteor storms? Find out in this preview of the year's skywatching highlights!

Solar System 2.0

March 17 – September 3

How many moons does Earth really have? Are planets orbiting beyond Pluto? Is Pluto even a planet? If you thought you knew all there was to know about the planets, come explore how new discoveries are revealing strange new facts about our Solar System.

Mysteries of the Millennia

Through June 11

What cosmic mysteries wait to be solved as we enter the 21st Century? How has our understanding of our place in the Universe changed with the coming of each new millennium?

Neighbors in Space

Ongoing

In this family show, the cosmic cartoon critter, Moon Mouse, leads an exploration of the Sun, Moon, and the planets of the solar system. "Neighbors in Space" is offered in the morning for the convenience of Members with younger children.

The Sky Tonight

Ongoing

A relaxing tour of the current night sky, focusing on constellations, visible planets, the phase of the Moon, and upcoming celestial events visible with the unaided eye. This is our most free-form presentation, where the sky is the "star of the show".

On Our Cover

This photograph of Japanese Cranes, also called Red-Crowned Cranes, was taken on mainland China in November 1994. The photograph is on display in the Academy's newest exhibit, *A Thousand Cranes*, a collection of photographs taken by Wu Shao-Tung.

Morrison Planetarium hosts two live music concerts in March

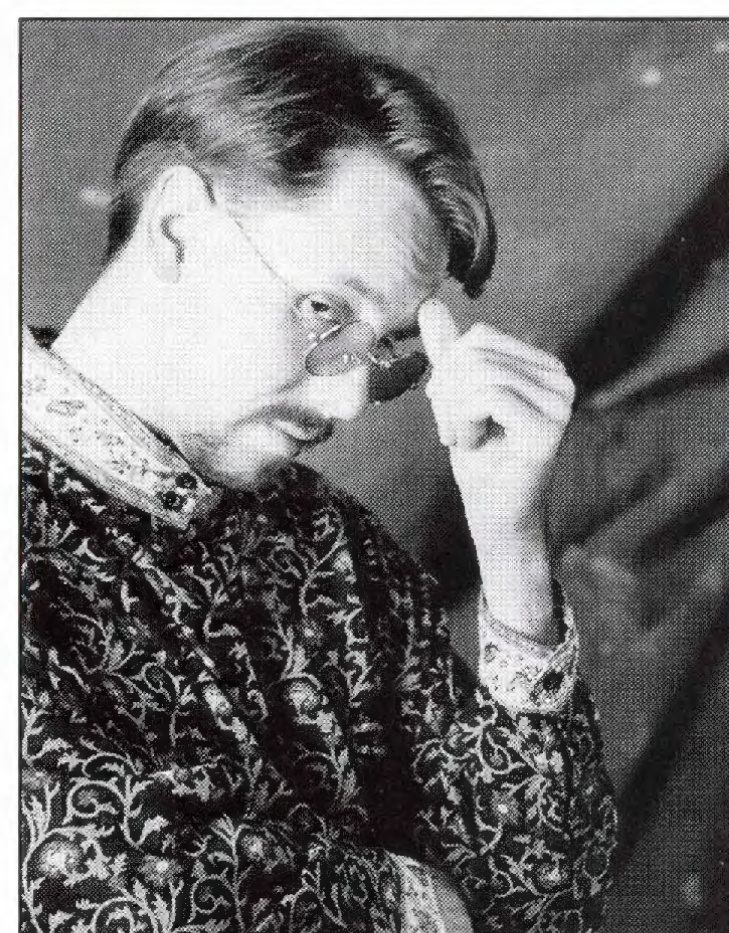
Celebrate **Spring Equinox 2000** with Kevin Keller and Steve Roach, Sunday, March 19 at 8 pm. Kevin's music has been heard in several recent planetarium shows, including **Mysteries of the Millennia**. Returning for another concert under the stars, Kevin is joined by renowned electronic ambient

music artist, Steve Roach.

Advance tickets are available on-line at

www.ticketweb.com for \$17. Remaining tickets will go on sale at the door one hour before showtime, and cost \$20. Advance tickets will not be available from the Planetarium.

March 26, at 7 pm, Morrison Planetarium welcomes Dmitri Matheny and Ann Dyer back for



Kevin Keller

Equinox III: Music Inspired by the Cosmos, their 3rd concert under the stars. Dmitri's flugelhorn is accompanied by Ann Dyer's vocals, John Shifflet on bass, Darrell Grant on piano, and celestial visuals on the Planetarium dome in a treat for the eyes and ears. Ticket prices are \$12 adult/\$10 Academy members/\$8 students and seniors. Please call (415) 750-7141/7127 for more details.

February – May Sky Show Schedule

Sky Show	Weekdays	Weekends
February 1 – March 13		
Neighbors in Space		11 am
Almanac 2000	2 pm	12 & 2 pm
Mysteries of the Millennia		1 & 4 pm
The Sky Tonight		3 pm

Please note that the Planetarium will be closed March 13 through March 16 to install *Almanac 2000*.

March 17 – June 11

Neighbors in Space		11 am
Solar System 2.0	2 pm	12 & 2 pm
Mysteries of the Millennia		1 & 4 pm
The Sky Tonight		3 pm

Additional shows will be offered on the first Wednesday of each month, and for certain holidays. Please call (415) 750-7141 for details.

Benjamin Dean Lecture Series

A Look Back at the History of Astronomy

During the year 2000, the Benjamin Dean Lecture Series will first look back at the development and history of astronomy, then look forward to try to visualize the future of the science and its impact on humanity.

The Power of the Stars: The Role of the Sky in Developing the Cosmology of Civilizations

Dr. Bryan Penprase, Pomona College

February 29 (Tuesday)

Throughout the ages, people have responded to the night sky in dramatic expressions that capture the essence of the period. Dr. Penprase will review the ways in which the sky has unified, inspired and challenged civilizations around the world. The role of astronomy and celestial symbolism in both defining and expressing the essence of culture will also be explored, with examples from the civilizations of the Near East, Egypt, Mesoamerica and South America, China, and the Native American Southwest. As civilizations develop, celestial imagery is incorporated into a cosmology that summarizes the world view of the relation between humans and the universe. Dr. Penprase will provide examples of cosmologies from around the world. The surprising diversity, and in many cases, similarities, in these cosmologies can provide interesting insights into human nature and humanity's role in the universe.

Astronomy of the Twentieth Century: A Retrospective

Dr. Helmut Abt

March 28 (Tuesday)

Although watching the sky has been an occupation for several millennia, it has not been until the twentieth century that the physical nature of objects observed has begun to be understood. Every aspect of astronomy has been revolutionized this past century. "Astronomy of the Twentieth Century: A Retrospective" will be presented by Dr. Helmut Abt of the National Optical Astronomy Observatories on March 28.

As the editor of the *Astrophysical Journal*, the world's most prestigious professional astronomy publication, for the last quarter of the century, Dr. Abt has personally witnessed much of the exciting revolution that has been taking place within the science. We now are conversant with galaxies, quasars, black hole, an expanding Universe, the Big Bang, fusion power of stars, chemical composition of stars and nebulae, and many other fascinating components of our Universe that were unheard of only 100 years ago. Dr. Abt will review what he considers to be the most significant astronomical breakthroughs of the past century with a hint of a look forward.

How Henry Norris Russell Changed Astronomy

Dr. David DeVarkin, Tuesday April 25

'... A Spring of Water in a Dry and Thirsty Land': William Huggin's Response to Kirchhoff's Great Discovery

Dr. Barbara Becker, Tuesday May 9

All lectures are \$3.00, in the Morrison Planetarium at 7:30 pm.
Information Hotline: (415) 750-7141

Conversations at the Herbst Theatre

City Arts & Lectures, Inc. presents

CALIFORNIA ACADEMY OF SCIENCES

Conversations at the Herbst Theatre 2000

All Programs at 8 pm

Monday
February 14

The Annual Claire Matzger Lilienthal Distinguished Lecture Dr. Jared Diamond

Professor of Physiology, Author
The Third Chimpanzee • *Guns, Germs, and Steel*

In Conversation with Roy Eisenhardt

Wednesday
March 1

Timothy Ferris

Science Writer, Journalist
The Whole Shebang • *Galaxies*

In conversation with Michael Malone

Wednesday
March 22

Natalie Angier

Science Correspondent - *The New York Times*, Author

Woman; An Intimate Geography • *The Beauty of the Beastly*

In conversation with Ellen Greenblatt

Tuesday
April 25

Dr. Mark Plotkin

Ethnobotanist, Author
In Search of Miracles • *Tales of a Shaman's Apprentice*

In conversation with Dr. Paul Volberding

Thursday
May 4

Sue Hubbell

Naturalist, Author
Waiting for Aphrodite • *A Book of Bees*

In conversation with Dr. Samuel M. Taylor

Tuesday
May 16

Paul Theroux

Novelist, Travel Writer
Fresh Air Fiend • *The Old Patagonian Express* • *The Mosquito Coast*

In conversation with Renee Rothmann

This series is made possible, in part, by a grant from the Richard & Rhoda Goldman Fund

For ticket information call City Box Office (415) 392-4400
California Academy of Sciences does not process ticket orders for these lectures.

CALIFORNIA
ACADEMY OF SCIENCES

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LIBRARY

February

Melanesia Underwater

With Dr. Gary Williams, CAS Invertebrate Zoologist

Melanesia is a vast region of over 3,000 miles extending in an arc from New Guinea to Fiji in the tropical South Pacific, and includes the Solomon Islands, Vanuatu, and New Caledonia. The abundant coral reefs of this region are a rich storehouse of marine biodiversity. Many islands are remote and rarely visited by tourists.

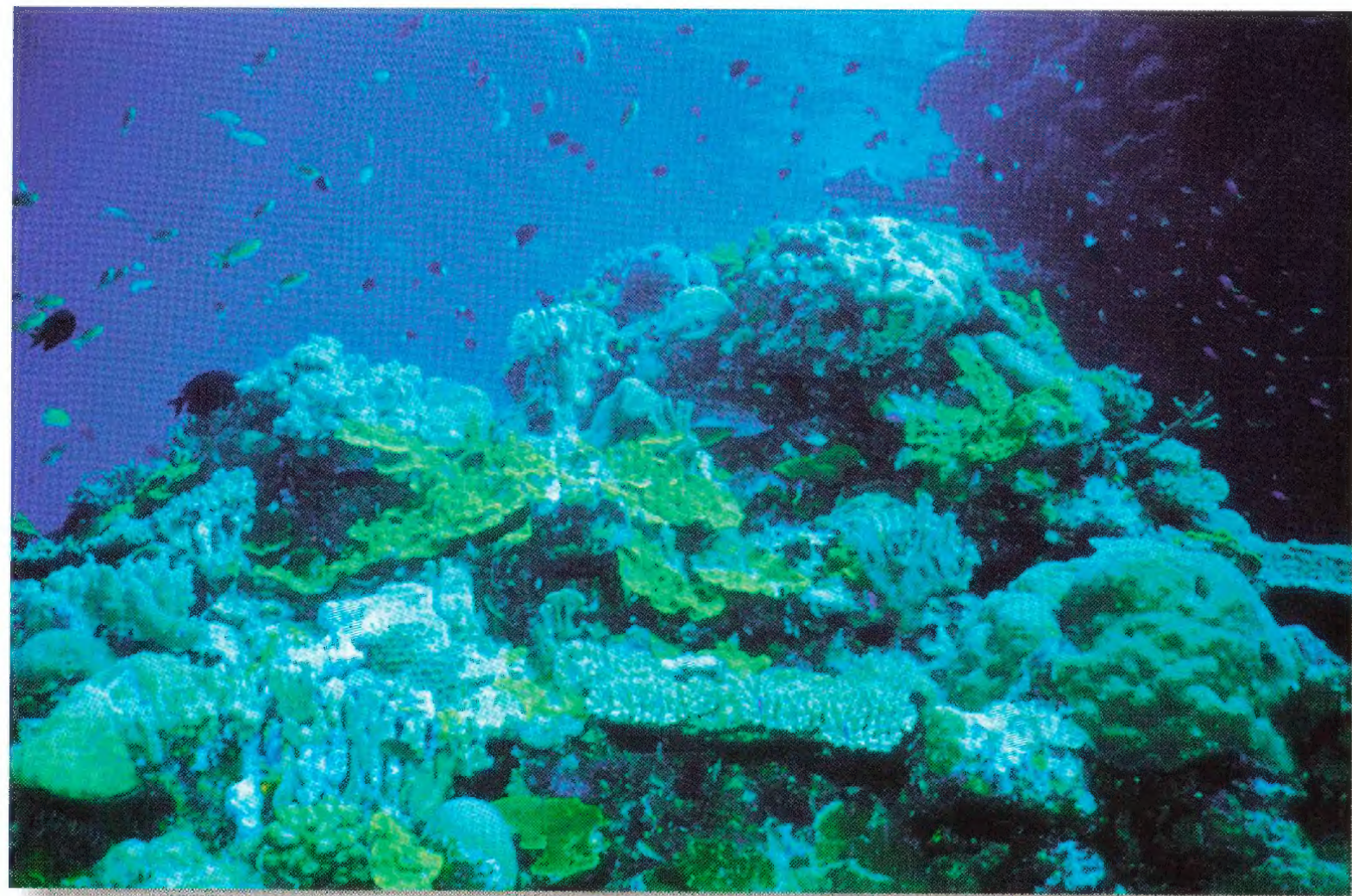


PHOTO: GARY WILLIAMS

Mane Island, Russell Group, Solomon Islands

Join Dr. Gary Williams, an Academy curator of Invertebrate Zoology, on an underwater journey to some of the more pristine Melanesian coral reefs, and observe some of the remarkable plants and animals that inhabit this unique region.

February 9, 2:00 pm & 7:30 pm
Morrison Auditorium

Russia's Megafauna
Past, Present, and Future

With biologist Dr. Michail Vladimir Propp

Join us for an interesting slide/lecture presentation by Professor Mikhail V. Propp, from the Institute of Marine Biology at the Russian Academy of Sciences in Vladivostok.

He is in California on a lecture tour of various universities.

Professor Propp will touch on the megafauna that roamed Russia's steppes in the recent past—including the lion, and

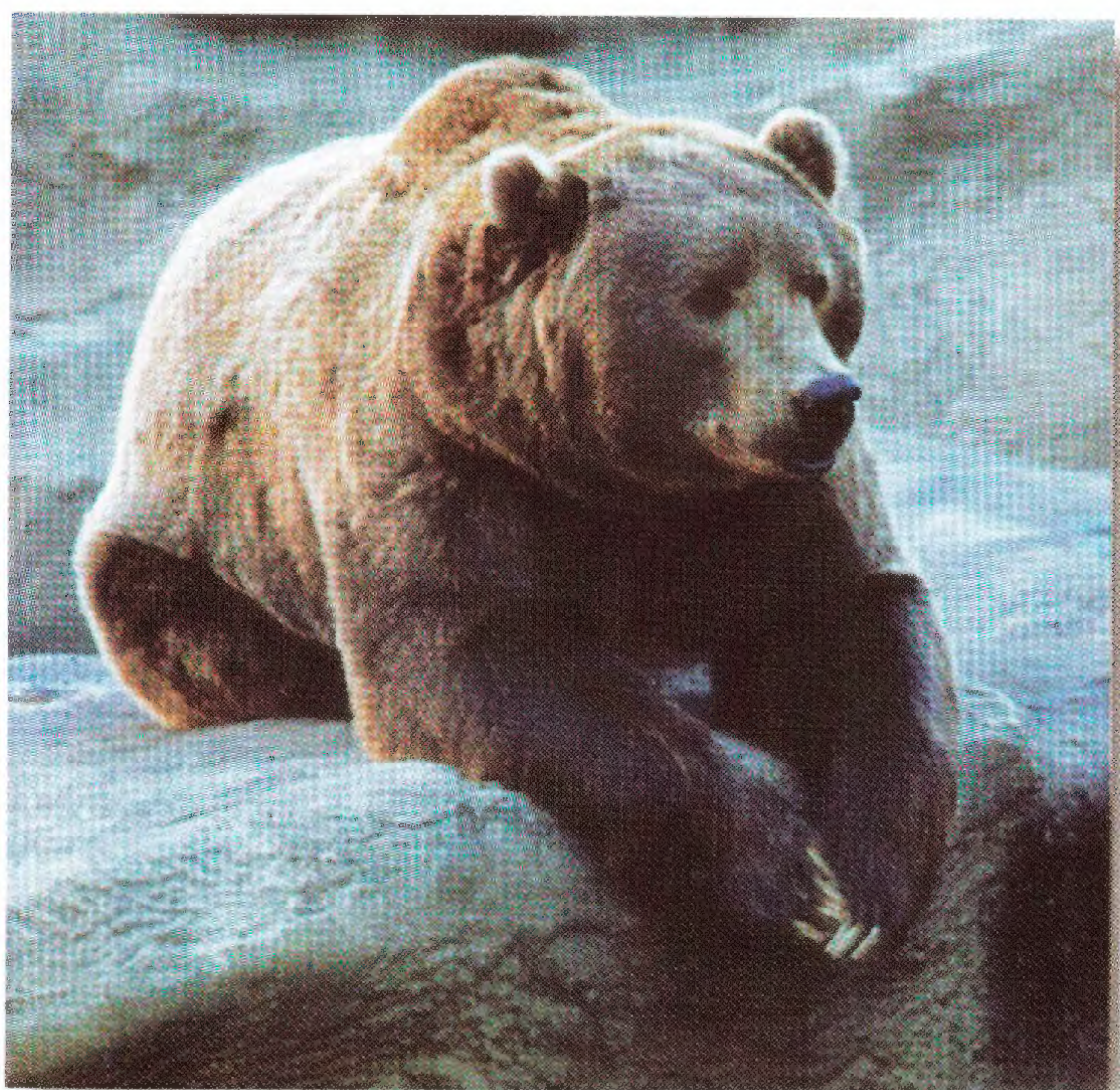


PHOTO: CAS PHOTO COLLECTION

Kodiak Bear, *Ursus middendorfi*

bison—and describe the natural history of the mammals that inhabit Russia and the adjacent waters today. He will pay special attention to the present status of the big cats—tiger and leopard—and the marine mammals—whales, seals, sea lions and sea otters. We are delighted to welcome Professor Propp.

March 8, 2:00 pm & 7:30 pm
Morrison Auditorium

Upcoming Members Lectures and Events

April 12

A Wolf: Real or Imagined

With biologists Pat Tucker and Bruce Weide

May 10

Open House for Members

6:00 to 9:00 pm

We're Trying to Keep Up

Academy memberships are growing in numbers and popularity, plus we've just completed a conversion of our database. So you can imagine that our office staff sometimes experiences difficulties keeping up with the pace. Some members have voiced their concerns about this and we are listening. We'd like to assure you that we are doing everything we can to give you the best possible service.

Carry Your Membership Card

Please help us serve you more efficiently by bringing your membership card with you each time you visit the Academy. Your entry into the museum will be easier when you do this. Thanks so much.

Renewing Your Membership?

The Membership Booth at the main entrance to the Academy is open seven days a week (except Thanksgiving & Christmas) from 10:00 am to 4:00 pm. Just bring your renewal notice and payment to renew in person.

Many thanks to the following members who have increased their support to the Academy and its Annual Fund in the last two months:

Mr. Charles Brush
Mr. Mark Bowers
Veronica Cannon
Min-Jen Chang & Eddie Lee
Colin Chapman
& Kirsten Malone
Mr. John Differding
Richard & Marcia Gold
Richard & Frances Hogan

Fritz & Frances Hogan
Fritz & Beverly Maytag
Steven & Nina Moore
Ms. Erna Ordeman
David & Kathleen Pogran
Miss Elizabeth Rieger
Jocelyn Tom & John Lee
Suzy & William Vogler
William & Mary Ann Westfield

Junior Academy

Seeking Sharks

The morning of November 6, 1999 saw the Education Department full of 6-8 year olds gaping in awe at the many preserved shark specimen jaws staring at them! Cries of, 'Oh they ARE sharp', and many great questions filled the lively Junior Academy class taught by long-time instructor, Soncie Veil. After exploring basic shark anatomy, habitat, and behavior, the children had fun seeing the sharks here at the

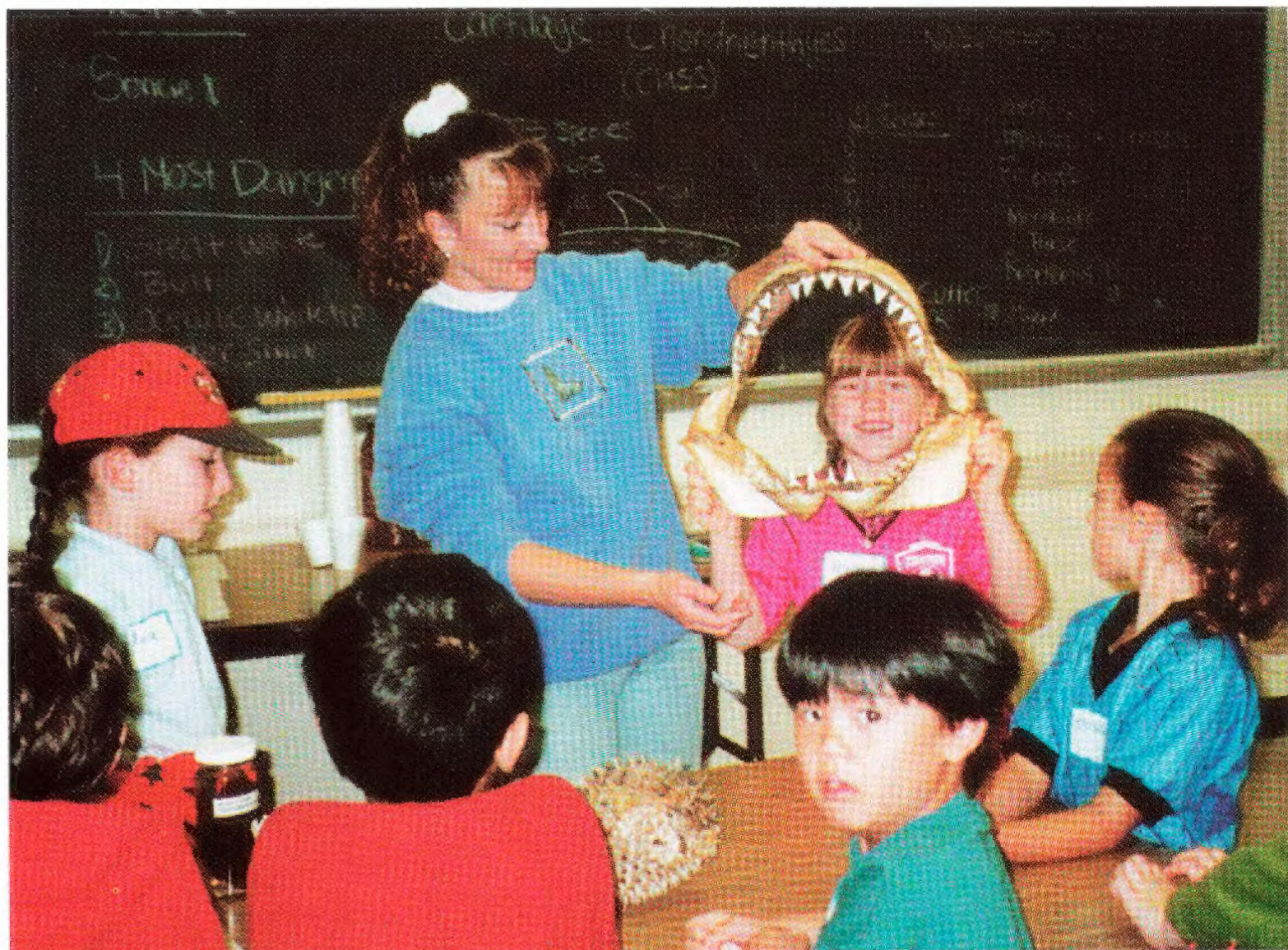


PHOTO: NANCY LAURENSEN

Shark jaws up-close

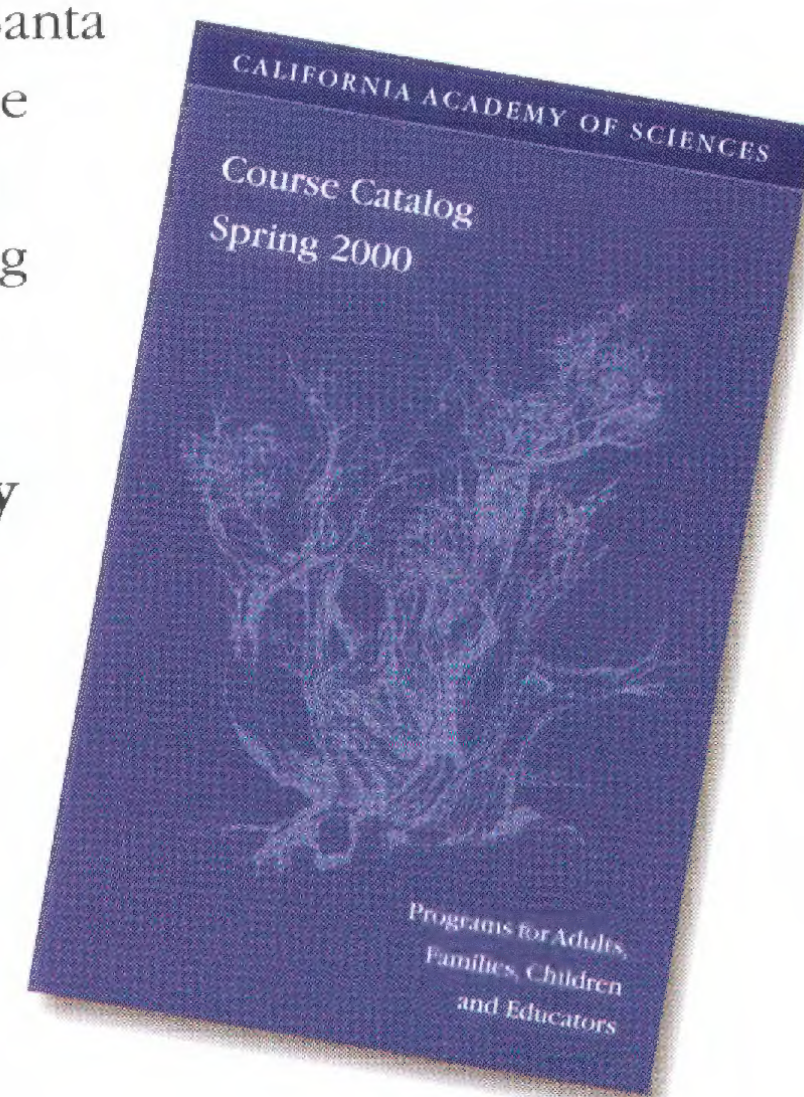
Steinhart Aquarium. To top off an exciting morning, Helen Tozer, an Aquatic Biologist at the Steinhart Aquarium brought the children back behind-the-scenes to help feed the sharks. Spine tingling indeed!

To check on class availability for spring holiday workshops, please call the class hotline: (415) 750-7575. For a course catalog, please call (415) 750-7100.

Academy Courses/Field Trips

Learn how coral reefs work, investigate personal decoration in New Guinea, illustrate songbirds, visit the site of the 1906 Earthquake, understand the Big Bang. Or bring the family and climb Cone Peak in the Santa Lucias. These are some of the new classes and family field trips listed in the latest Spring 2000 Course Catalog. Check them out.

If you haven't recently received a catalog, call (415) 750-7100, or visit www.calacademy.org/education/.



Outstanding Volunteers

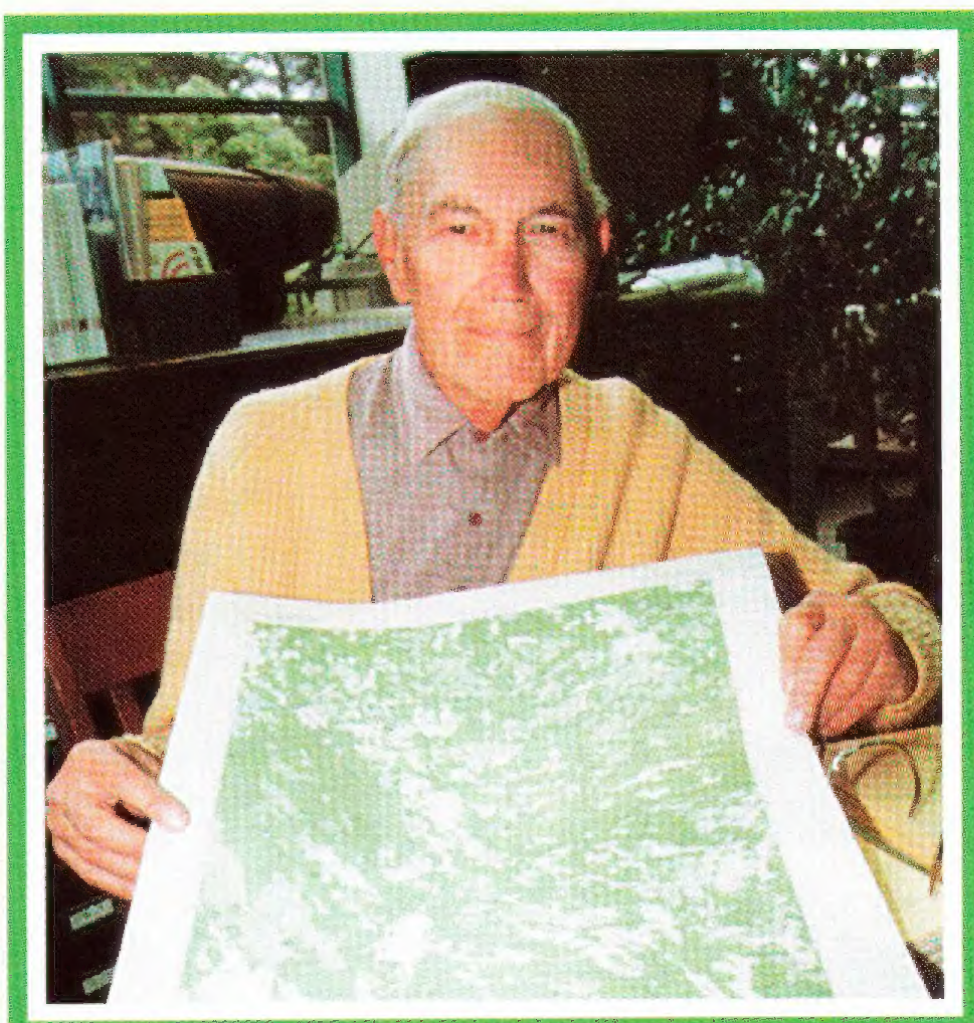


PHOTO: DONG LIN

Donald Heckman

career opportunities in the field of physical chemistry, developing testing and inspection procedures for nylon in such industrial uses as cords and large diameter ropes, seat belts, air bags and tires. Years later, when he retired, Donald and his wife followed their daughter to San Francisco in 1985 and not long after, he became an Academy member and volunteer.

In addition to the valuable work he performs for the library, Donald enjoys his hobbies of model railroading, an enthusiasm generated by his grandfather who was an engineer on the Reading Railroad and who let Donald ride with him to the roundhouse. He also likes to do projects in his workshop, and occasionally the library benefits. When the library received new shelving, the plastic boxes, which are used to file periodicals, were too tall to fit. So Donald carried them home on the bus, two at a time and back again, after he had cut them down by three inches. That's what makes him an outstanding volunteer!

WHERE IN THE WORLD ... would we be without Donald? We'd probably be knee-deep in maps (55,000 of them!) were it not for our featured volunteer, Donald Heckman, who works in the Academy's Library. The library's collection of maps, mostly of the Western United States dating from the 1850's to the present, continues to grow at an alarming rate. About ninety percent are issued by the federal government (U.S. Geological Service) for whom the Academy is an official depository. These maps are subject to audit; and must be carefully documented. Donald records every item in a great binder full of narrow-lined paper. His small, precise printing now fills over 1,000 pages. He also helps out with re-shelving books and general housekeeping, but as he says, he'd "just as soon keep his distance" from computers.

His college ambition was to graduate with a dual major of Chemistry and Medicine to become a doctor; but those plans were abandoned before he entered medical school when his wife gave birth to a daughter. Instead, he pursued emerging

Public Programs

Venoms: *Striking Beauties* Exhibit

While visiting the new ***Striking Beauties*** exhibit, explore the intriguing world of venom through live animal presentations, hands-on activities and lectures. For the most up-to-date schedule, check the ***Striking Beauties*** page on our website www.calacademy.org, or call (415) 750-7159. All programs will be held in the program area of the ***Striking Beauties*** exhibit unless otherwise noted and are free for Academy members unless otherwise noted.

Meet a Bay Area Rattlesnake

Get up close and personal with a live Northern Pacific rattlesnake as naturalist Katie Colbert talks about their intriguing habits in the Bay Area. This program is presented in conjunction with the East Bay Regional Park District.

March 25 (Saturday) 12:30 and 2:00 pm

Venomous Animals Feeding

Students will witness the amazing mechanisms of snake envenomation and consumption of prey. In addition, there will be an overview of snake anatomy with an emphasis on the venom system.

March 26 (Sunday) 1:00 to 4:00 pm

Members: \$20 adults/\$15 children

Non-members: \$25 adults/\$20 children

Reservations required. Call (415) 750-7097

Venomous Arthropods of North America

See Venoms Lecture Series, p. 11

March 28 (Tuesday)



PHOTO: DONG LIN

Asian Forest Scorpion

Fashion Your Black Widow

Can you tell a black widow from any other spider? Join us for a hands-on craft activity and design your very own black widow.

March 28 (Tuesday) 12:30 pm

Deadly Fish

Touch the stinger of a bat ray, see a lethal stonefish, or feel the long spines of a scorpion fish as we discover the secrets behind some of the deadliest fish in the world.

March 29 (Wednesday) 1:00 pm

Dangerous Liaisons

Experience the extraordinary world of venomous insects and spiders through a hands-on presentation by the Insect Discovery Lab at San Francisco State University.

March 30 (Thursday) 2:00 pm

Black History Month Celebration at the Academy

Celebrate Black History Month at the California Academy of Sciences and learn about African American cultural traditions. All programs are free for Academy members. For the most up-to-date program schedule, check our website www.calacademy.org, or call (415) 750-7159.



E. W. Wainwright demonstrates the African roots of jazz

West African Dance

See Traditional Arts of the World, p. 9

February 5 (Saturday)

African American Step Show

See Traditional Arts of the World, p. 9

February 19 (Saturday)

The African Roots of Jazz

Internationally acclaimed jazz drummer, performer and producer E.W. Wainwright illustrates through a rhythmic and interactive presentation the social evolution of jazz from its earliest beginnings to the present day. This program is presented in conjunction with Young Audiences of the Bay Area.

February 20 (Sunday)

1:00 pm Auditorium

Traditional Arts of the World

All programs take place at 1 pm on select Saturdays in the Morrison Auditorium, unless otherwise noted. Presentations are free after general museum admission. For further information on these and other Traditional Arts Programs, contact Dr. Jennifer Michael in the Anthropology Department at (415) 750-7165. The Traditional Arts Program is funded by the Paul L. and Phyllis Wattis Foundation.

February

February 5—West African Dance



PHOTO: MARTY SOHL

Young dancer from African Queens

Led by founder and director Leslie Carter and accompanied by live drumming, the young dancers of African Queens will present a program of traditional dance from West Africa. This is a special program in honor of Black History Month.

February 13—Red Panda Chinese Acrobats

Wayne and Nancy Huey, acrobatic artists trained in China, will offer a demonstration of their remarkable talents. Wayne specializes in juggling and barrel

contortionism, while Nancy's specialty, the "Unicycle Bowl Flip," has earned her a place in the Guinness Book of World Records. (Contact them at rpacrobats@yahoo.com.) This is a special program in honor of Chinese New Year. (12 pm)



San Francisco Red Panda Acrobats, Chinese Barrel Contortionist

February 19—African American Step Show

Members of a Black sorority and a Black fraternity from U.C. Berkeley will demonstrate the art of "stepping." Mastering

and performing this dance form, which often combines elements of military drills with contemporary jazz and hip-hop moves, is a traditional part of the initiation process in many of these organizations. This is a special program in honor of Black History Month.

February 26—Balalaika Making and Balalaika Music
Master instrument-maker Francis Kosheleff will discuss the fabrication of the balalaika, a key instrument in Russian traditional music. He and members of the musical ensemble Balka will perform selections of Russian folk music.

March

March 4—Chinese Classical and Folk Dances

Diana Ming Chan and the Chinese dance troupe The Flying Angels will perform songs and dances from the folk and classical traditions of China.

March 11—Folk Songs from Africa

Ken Okulolo and the Nigerian Brothers will share traditional songs that they learned as children in Africa. Singing in four-part harmony, the musicians will accompany themselves with a range of instruments—hand drums, sekere, clave, cowbells, talking drum, and guitar.



Flying Angels Dance Company

Chinese Traditional Dances

In honor of Chinese New Year, the Academy presents Shanghai native Lily Cai who will narrate and perform dances from the T'ang and Qing Dynasties. This program is offered in conjunction with Young Audiences of the Bay Area and is free to Academy members.

*February 6 (Sunday)
Auditorium*



Lily Cai

Spring Lectures

*The L.S.B. Leakey Foundation and
California Academy of Sciences present:*

The Role of Rock: Technology and Human Origins

Nicholas Toth
Indiana University



Nick Toth

Tool construction and use can be seen in non-human primates, especially chimpanzees, but modern humans' sophisticated use of technology and symbols is a significant departure from the rest of the animal world. Toth examines the rise and evolution of tool-making in the prehistoric record, and discusses some of the major current debates regarding the Early Stone Age, such as which

hominid species were making tools, the level of intelligence required, and whether evidence from sites indicate a hunting or scavenging mode of operation. Toth draws on his own experiments making and using stone tools, and his archaeological field work in Africa, Asia and Europe to illustrate the evolution of human technology. He shares his predictions regarding what types of additional advances might be expected as we enter the new millennium.

February 17 (Thursday)

7:00 pm

This lecture is preceded by a cocktail reception at 6:00 pm

Lecture only: \$6 members/\$10 non-members

Lecture and reception: \$36 members/\$45 non-members

The Wildlife Talks

*Sponsored by the Wildlife Conservation Society and the
California Academy of Sciences.*

The Wildlife Talks feature research scientists from the Wildlife Conservation Society and the California Academy of Sciences who are making significant contributions to national and international scientific research. These presentations focus on the intersection between science and conservation. Highlighting their most current research, the speakers demonstrate how the collection of scientific data in the field contributes to resource management decisions worldwide. All programs begin at 7:00 pm in Morrison Auditorium, California Academy of Sciences.

Feral Goats: A Case Study for Management and Conservation on Aldabra Atoll, Seychelles

Dr. Margaret Gould Burke
California Academy of Sciences

In recognition of its unique flora and fauna, such as the giant land tortoise and flightless rail, Aldabra Atoll was declared a

World Heritage Site in 1982. Feral goats have existed on Aldabra for over one hundred years. Dr. Margaret Gould Burke will discuss her research on the population dynamic and behavioral ecology of the goats and their impact on the island ecosystem, as well as the difficulties surrounding management and eradication issues.

March 23 (Thursday)

\$6 members/\$10 non-members

Downtown Lecture Series

Conservation in the San Francisco Bay Area

California and the San Francisco Bay Area have a rich history of biological diversity. Encroaching development and habitat degradation have reduced and threatened this diversity. In recent years, however, many organizations and individuals have successfully restored and preserved some projects. Join us as we explore and celebrate the efforts of regional scientists, educators and conservationists who are making significant contributions to their fields.

The lectures take place at San Francisco State University's Downtown Campus, located at 425 Market Street (at Fremont). Ample parking is available below the building, and the Embarcadero and Montgomery BART stations are close by.

All lectures start promptly at 5:45 pm

Members: \$6/lecture, \$20/series of four

Non-members: \$10/lecture, \$32/series of four

Renaissance at the Presidio

Meredith Savage
Golden Gate National Parks Association

Marc Albert
National Park Service

In 1994 the Presidio was transferred from the United States Army to the National Park Service. Since that time a nationally recognized program of restoration and stewardship has been underway with the support of several agencies and organizations and thousands of volunteers. Albert describes the development of the Presidio Park Stewards Program and its efforts to protect and enhance endangered plant species such as *Lessingia germanorum* and *Clarkia franciscana*. Savage addresses the extraordinary transformation of Crissy Field, where a tidal marsh that was obliterated almost a century ago has been restored. She discusses the monitoring program she has developed to track changes over time in plant and animal life at the restored marsh. Learn how this former military base is becoming San Francisco's favorite urban jewel.

February 25 (Friday)

The Role of Salmon in Ecosystem Function

Paul Siri
Bodega Marine Lab

In recent years, scientists have documented increasing evidence that returning salmon play a significant role in the maintenance

of forest/stream processes. From consuming algae and insects to becoming food for bears, salmon play a pivotal role in food webs that were once sustained by millions of their ancestors. The salmon in our streams and rivers today represent but a fraction of their historical numbers. Siri addresses the implications of this decline for the future of salmon and the ecosystems they support. He describes the science of salmon restoration in the Central Valley and coastal streams, the changes in ocean fisheries, and the role of fish in global food security.

March 3 (Friday)

Conserving California's Great Natural Landscapes

Steve McCormick

The Nature Conservancy of California

From temperate rainforests to expansive deserts, and from soaring mountain ranges to glorious coastline, California possesses a stunningly rich natural heritage. But with a population growth of 18 million expected over the next twenty-five years, these amenities are at risk, and the state is regarded as one of eighteen global conservation "hot spots". McCormick discusses the efforts of The Nature Conservancy to identify the most important remaining examples of the natural California landscape and the strategies to protect them. He describes in detail a few landscape-scale projects that illustrate how natural habitats and wildlife can be preserved while accommodating human uses.

March 10 (Friday)

The Great Sand Waste: Natural History of San Francisco's Sand Dunes

Pete Holloran

California Native Plant Society

Two centuries ago, massive sand dunes covered much of San Francisco, extending from the ocean seven miles inland to San Francisco Bay. As the city grew, the fourth largest coastal dune system in California was transformed beyond recognition into Golden Gate Park, the Sunset, Richmond, and Fillmore Districts, and other neighborhoods. Dune lakes, mobile dunes, dune scrub, and coast live oak woodlands provided habitat for a diverse and interesting flora and fauna, including endemic species. Though much has been lost, pockets of native habitats remain. With the recent advent of stewardship programs hundreds of volunteers have begun restoring remnant dunes by removing invasive plants and planting native species. Holloran reviews the natural history of San Francisco's dunes and current stewardship efforts, and shares dramatic historic photographs from the collection of local historian and photographer Greg Gaar.

March 17 (Friday)

The Venoms Lecture Series

Offered in conjunction with the *Venoms: Striking Beauties*, these lectures will be held in Morrison Auditorium at 7:30 pm. The exhibition will be open for viewing from 6:30 to 7:30 pm.

Venomous Arthropods of North America

Stanley C. Williams, San Francisco State University

Venom—an injected "toxic cocktail"—is used by a variety of arthropods to injure and kill other animals, capture prey, and deter predators. The evolution of venom has given certain animals a potent edge in survival. It has also produced some strikingly beautiful animals, arousing both fear and attraction in humans. Williams discusses venom in bees, ants, and wasps, as well as in scorpions, centipedes, spiders, and ticks. He describes commonly encountered species, their beneficial roles and offers recommendations for anyone who enjoys being outdoors, whether hiking in a national park or lounging in their own backyard.

March 28 (Tuesday)

Venoms and the Adaptive Radiation of Snakes

Dr. Harry W. Greene, Cornell University

Snake venoms are a complex mixture of immobilizing and digestive chemicals primarily used for feeding. As a result, some species can consume animals weighing up to one and a half times their own mass. Greene explores the natural history and evolution of venomous snakes, including how venoms protect snakes against their own predators and how the use of mimicry protects nonvenomous species. He discusses the lives of individual black-tailed rattlesnakes based on his field studies in Arizona over the past twelve years.

April 4 (Tuesday)

Upcoming Venom Lectures

The Evolution of Warning Coloration and Mimicry on Coral Reefs

Dr. Terrence Gosliner, CAS Senior Curator

with

Corals as Predators and Prey

Dr. Gary Williams, CAS Associate Curator

June 26 (Monday)

Cnefarious Cnidarians: Aggressive Anemones and Stinging Jellyfish

Dr. Daphne G. Fautin, University of Kansas

August 22 (Tuesday)

Members: \$6/lecture, \$20/series of four

Non-members: \$10/lecture, \$32/series of four

Halloween at the Academy

Last year's Halloween Party at the Academy was a memorable event for the whole family. Little and not-so-little goblins, witches, and werewolves were shown live creepy crawlers and other fascinating specimens from the collections by curatorial staff. A fun occasion, the Academy Halloween Party kept guests busy with music, buffet and beverages, and many other pleasant surprises. The annual, multi-generational Halloween Party helps support the Academy's programs in scientific research and education.



PHOTO: DONG LIN

Giant, live weevil makes an appearance at last year's Halloween Party

China Natural History Project

In 1998, the Academy launched the China Natural History Project, an international multi-disciplinary and multi-institutional biodiversity research project in a remote corner of Yunnan Province, China. Very little is known about this isolated forest region in China, located near the farthest extent of the Himalayan range on the border with Myanmar (Burma). The Academy is working primarily in the Dulongjiang River Valley. Sponsored by the National Geographic Society, the local Chinese American community, and other dedicated groups and individuals, the second expedition leaves for China this spring.

The Academy is planning to greatly expand the scope of the research project. The project will include scholar and student exchanges between our institution and scientists from the People's Republic. A video on the project will be produced, as well as a large-format book with numerous color photographs highlighting the flora and fauna of Yunnan.



PHOTO: BRUCE BARTHOLOMEW

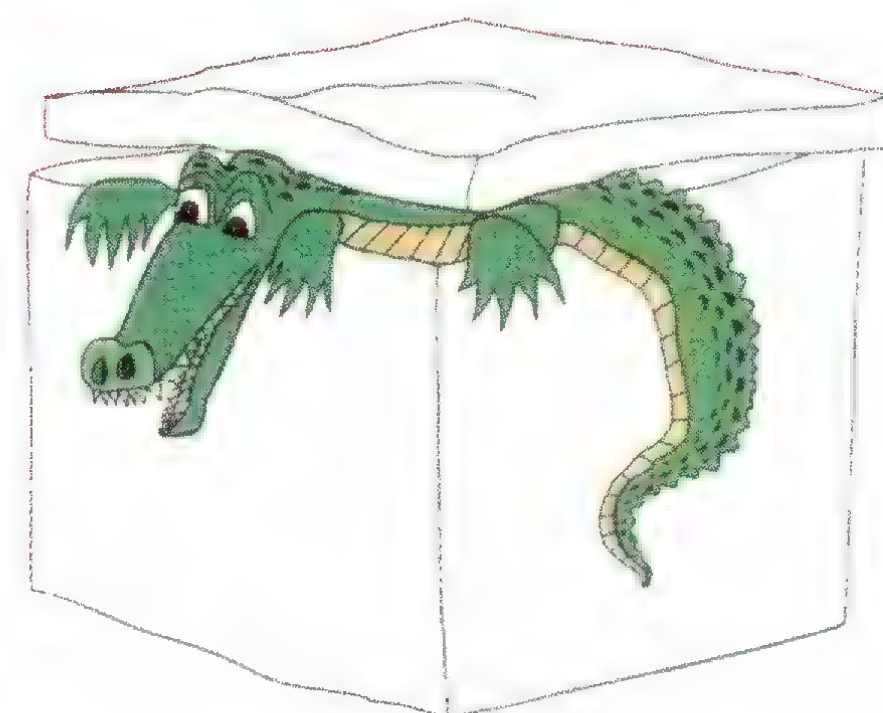
Broad-leaved evergreen forests of the Gaoligong Shan region in Western Yunnan

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Learn The Diversity of Life As an Academy Docent

Did you miss the docent class when it was offered in the fall? Don't fret! You have another chance to explore the natural world under the guidance of eminent scientists, share that knowledge with visitors and meet other people with similar interests, while helping the Academy advance its mission to explore and explain the natural world. *The Diversity of Life* training course is being repeated, this time in an evening format from 6:00 to 9:00 p.m. on Mondays from Feb. 7 - May 8.

This foundation course will examine what biodiversity means, why it is important, and what is being done to conserve it. Upon graduation, docents will give guided tours throughout the Academy, interpreting the displays from the viewpoint of biodiversity and the Academy's mission. Tuition will be \$40, with some scholarships available.

For further information or a volunteer application please call (415) 750-7154.



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In Retrospect...

By Michele Welck, Academy Archivist

125 Years Ago

February 22, 1875 – “A special meeting was held at Berkeley. Mr. Robert E. C. Stearns made a few remarks reminding the members that the Academy would have to depend mainly upon the University to fill its ranks as time thinned it of its pioneers. Professor Joseph LeConte read a paper ‘On Some Ancient Glaciers of the Sierra’ and described two new pieces of apparatus recently acquired by the University – one for projecting microscopic objects, and the other for measuring the force of electric currents. Dr. Albert Kellogg read a paper on ‘Hops.’ Resolutions were adopted expressive of interest in the affairs of the University and satisfaction at its advance.” *The University of California was the product of an 1868 merger between a private college in Oakland and a land grant college. The school had been located in Berkeley for less than 1½ years at the time the Academy met there.*

100 Years Ago

February 6, 1900 – Appropriations approved for the upcoming year included \$6,300 for salaries, \$800 for the museum, \$150 for illustrating lectures, \$160 for a scrub-woman, \$140 for wood and coal, and \$75 for a type-writing machine.

February 19, 1900 – “A communication was received from the California Club, containing resolutions adopted by that club in reference to measures for the preservation of the Calaveras Grove of Big Trees and asking the concurrence and aid of the Academy. Gen. J. F. Houghton suggested that it would be more fitting for the Academy to take separate action in the matter and moved that President David Starr Jordan and Secretary G. P. Rixford, in connection with President Wheeler of the University of California, be appointed a committee to draw up resolutions requesting Congress to purchase the tract of land including the Calaveras Big Tree Grove with a view to its preservation. The motion was carried.” *John Muir and others first proposed park status for this property in 1877 when it was up for sale, but it remained in private hands until 1931, when the North Grove was acquired*

and Calaveras Big Trees State Park was dedicated. The 1900 effort to preserve the grove did gain the support of both houses of Congress; however, the owner was unwilling to sell at that time.

50 Years Ago

February 15, 1950 – The annual meeting of the Academy was followed by a talk by Mr. Bradford Washburn, distinguished director of the

Boston Museum of Science. With the aid of colored motion pictures, Mr. Washburn gave an account of “Conquering Mount McKinley.”

25 Years Ago

February 1975 – “On January 31, Dr. John McCosker, Superintendent, Steinhart Aquarium, heading a team of eight American and French scientists and divers, departed for the east coast of Africa. Final destination: the Comoro Islands in the Indian

Ocean. The purpose: to bring back *alive* an ancient fish called the Coelacanth. The expedition has planned a six-week stay in the Comoro Archipelago.”

Due at least in part to a drought which interfered with the monsoon rains which bring the coelacanth up from the cool deep waters, the expedition did not capture their prize. They were, however, given two frozen specimens and had a postage stamp (below) printed in their honor. The expedition also returned with live flashlight fish and almost one ton of other collected specimens.



This Comoran postage stamp was produced in honor of the 1975 Coelacanth expedition led by Dr. John McCosker.



Belmore Brown, Bradford Washburn, and our own Earl Herald, the host, on the set of the television program "Science In Action."

February

5 Saturday

West African Dance
1 pm (p. 9)

6 Sunday

Chinese Traditional Dances
1 pm (p. 9)

9 Wednesday

Melanesia Underwater
2 pm & 7:30 pm (p. 6)

13 Sunday

Red Panda Chinese Acrobats
12 pm (p. 9)

14 Monday

Dr. Jared Diamond at the Herbst
8 pm (p. 5)

17 Thursday

The Role of Rock
7 pm (p. 10)

19 Saturday

African American Step Show
1 pm (p. 9)

20 Sunday

African Roots of Jazz
1 pm (p. 8)

25 Friday

Renaissance at the Presidio
5:45 pm (p. 10)

26 Saturday

Balalaika Making and
Balalaika Music
1 pm (p. 9)

29 Tuesday

The Power of the Stars
7:30 pm (p. 5)

March

1 Wednesday

Timothy Ferris at the Herbst
8 pm (p. 5)

3 Friday

The Role of Salmon in
Ecosystem Function
5:45 pm (p. 10)

4 Saturday

Chinese Classical and Folk
Dances
1 pm (p. 9)

7 Tuesday

**Vote YES on Proposition B
to Repair and Rebuild
the Academy**

8 Wednesday

Russia's Megafauna
2 pm & 7:30 pm (p. 6)

10 Friday

Conserving California's Great
Natural Landscapes
5:45 pm (p. 11)

11 Saturday

Folk Songs from Africa
1 pm (p. 9)

12 Sunday

Almanac 2000 Sky Show
CLOSES
(p. 4)

17 Friday

Solar System Sky Show
OPENS
(p. 4)

Natural History of San
Francisco's Sand Dunes
5:45 pm (p. 11)

19 Sunday

Spring Equinox 2000 concert
8 pm (p. 4)

23 Thursday

Feral Goats
7 pm (p. 10)

25 Saturday

Venoms: Striking Beauties
OPENS
(p. 3)

Meet a Bay Area Rattlesnake
12:30 pm & 2 pm (p. 8)

26 Sunday

Music Inspired by the
Cosmos
7 pm (p. 4)

Venomous Animals Feeding
1 - 4 pm (p. 8)

28 Tuesday

Fashion Your Black Widow
12:30 pm (p. 8)

Astronomy of the Twentieth
Century
7:30 pm (p. 5)

Venomous Arthropods of
North America
7:30 pm (p. 11)

29 Wednesday

Deadly Fish
1 pm (p. 8)

30 Thursday

Dangerous Liaisons
2 pm (p. 8)

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the use of public transportation to and
from Golden Gate Park. Visit our
website for details.
www.calacademy.org

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ongoing

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through July 30

Venoms: Striking Beauties
opens March 25

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permanent exhibit

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TOP 5 Things YOU Can Do to Help Pass Measure B

- 1.** **Vote YES on Measure B on March 7, 2000** if you are a San Francisco voter.
- 2.** **Tell everyone you know to Vote YES on Measure B.** Even if you are not a San Francisco voter, tell your friends who are to support Measure B on Election Day.
- 3.** Volunteer to make phone calls on behalf of the campaign to pass Measure B.
- 4.** Deliver literature to San Francisco neighborhoods in the weeks before March 7 to encourage voters to **Vote YES on Measure B on March 7, 2000.**
- 5.** Volunteer to work at the Measure B campaign headquarters.

For information about how to volunteer, call (415) 750-7295.

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MARCH
7TH**

VOTE YES ON PROP B

TOP 10 Reasons to Vote YES on Measure B

Fix Our Academy of Sciences

1. Since 1853, the California Academy of Sciences has explored and explained the natural world through scientific research and education. Founded after the California gold rush, it is the oldest scientific research institution in the west. Passing this bond measure will ensure that it will continue to serve San Franciscans for the next 150 years.
2. Bird Hall has been closed since the Loma Prieta earthquake in 1989. The bond will allow the Academy to reclaim this space and build a new early childhood education center.
3. The Academy's roofs leak and its electrical and mechanical fixtures and fire safety systems are out of date.
4. Due to the age of the buildings, some parts of the Academy are not currently compliant with the Americans with Disabilities Act.
5. The nearly 1,000,000 people who visit the Academy each year – including 330,000 school-aged children – deserve a seismically safe environment in which to learn about the natural sciences.
6. The natural sciences play an important role in the education of our children. The Academy opens its doors to all San Francisco school groups free of charge.
7. With a collection of more than 14 million examples of plants, animals, fossils and artifacts, the Academy is an international center for environmental research. Rebuilding and retrofitting the Academy will ensure that this collection, one of the largest in the world, remains safe for years to come.
8. Research space for more than 1,000 scientists who maintain and utilize the Academy's collections and facilities will be expanded.
9. Passage of Prop. B will be a local investment in the future of research that will benefit the environment on a global scale.
10. Every other major City institution has been retrofitted since the Loma Prieta earthquake. The Academy has waited patiently for its turn to shore up its buildings.